Math 9 Variables – Like Terms Lesson 2

Solutions

1. Write down the like terms.

a) 2ab, 7, a, ab, -3ab, -2b, -ab b) $4t^2$, $-4t^3$, 4, $4t^3$, $2t^4$, $\frac{2}{3}t$, $-7t^3$

c) x^2y^2, xy, $-5x^2y^2$, -5x, $9x^2y$, xy^2

a) 2ab, ab, -3ab, -ab	b) $-4t^3$, $4t^3$, $-7t^3$	c) x^2y^2, $-5x^2y^2$

2. Simplify by combining like terms.

a) x + x + x + y b) u – t + u – t + u c) 3x – 2x + x + 5

d) -4k + 9 + 3k – 2 + k – 2k e) 2d + 6e – 3e –d + 2e + 6d

f) $5r - r^2 + 3r - r^2 + 5t - 6r$ g) 2xy – 5xyz + 3 – 2 + xyz

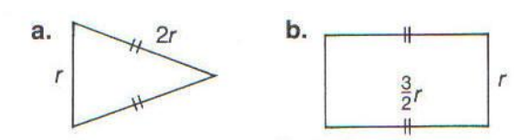
a) 3x + y	b) 3u – 2t	c) 2x + 5	d) 7 – 2k
e) 7d + 5e	f) $-2r^2 + 2r + 5t$	g) 2xy – 4xyz + 1	

3. Simplify the expression. Evaluate if a = 4 and b = -3.

a) 3a + 5 – a b) a + 2b – 4b + 3a c) 19 – a + b^2 + 4a d) a^2 + ab + 5ab + $2a^2$ + 3

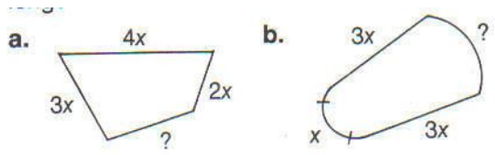
a) 3a – a + 5 2a + 5 2(4) + 5 8 + 5 13	b) a + 3a + 2b – 4b 4a – 2b 4(4) – 2(-3) 16 + 6 22	c) b^2 – a + 4a + 19 b^2 + 3a + 19 $(-3)^2$ + 3(4) + 19 9 + 12 + 19 40	d) a^2 + $2a^2$ + ab + 5ab + 3 $3a^2$ + 6ab + 3 $3(4)^2$ + 6(4)(-3) + 3 3(16) +(-72) + 3 48 – 72 + 3 -21

4. Write an expression for the perimeter. What is the perimeter if r = 8 cm.



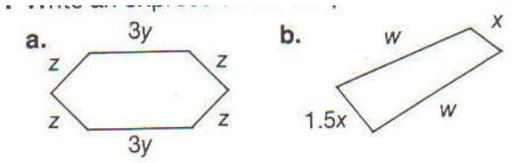
Perimeter = r + 2r + 2r = 5r = 5(8) = 40 cm	Perimeter = r + r + $\frac{3}{2}r + \frac{3}{2}r$ = 2r + 3r = 5r = 5(8) = 40 cm

5. The perimeter of the figure is 12x. What is the length of the fourth side?



12x – (3x + 4x + 2x) 12x – (9x) 12x – 9x 3x	12x – (x + 3x + 3x) 12x – (7x) 12x – 7x 5x

6. Write an expression for the perimeter.



z + z + z + z + 3y + 3y 4z + 6y	1.5x + x + w + w 2.5x + 2w

7. The cost in dollars of manufacturing the machine parties calculated using the formula $c = -0.05n^2 + 60n + 30 - 10n$, where n is the number of parts made.

   Find the cost of manufacturing 200 of these parts.

$c = -0.05n^2 + 60n - 10n + 30$
$= -0.05n^2 + 50n + 30$
$= -0.05(200)^2 + 50(200) + 30$
$= -0.05(40000) + 10000 + 30$
$= -2000 + 10000 + 30$
$= \$8030$